CLAIMS

I claim:

1.

A security system for a shipping container of the type having doors with a rotatable keeper bar and operating handle to be secured by a hasp having a pair of ears with vertically-aligned apertures, comprising:

a security cover, including:

a vertical channel having upper and lower ends, a front wall and opposing sidewalls extending rearwardly from the front wall;

a top plate mounted in the channel, perpendicular to the front and sidewalls and extending rearwardly the extent of the sidewalls;

a bottom plate mounted in the channel, perpendicular to the front and sidewalls and extending rearwardly the extent of the sidewalls;

a pair of vertically aligned apertures formed in the top and bottom plates, spaced from the front and sidewalls, for receiving a seal pin therethrough; and

a pair of horizontally aligned openings formed in the sidewalls, extending forwardly from rearward edges of the sidewalls, for receiving a shipping container handle therethrough;

a seal pin for use in retaining the security cover on the hasp of the shipping container, including:

a rigid elongated cylindrical shaft, having upper and lower ends;

an upper annular groove formed in the shaft spaced from the upper end and extending around a circumference of the shaft;

a lower annular groove formed in the shaft spaced from the lower end and extending around a circumference of the shaft;

a pair of end caps for securement to each end of the shaft, each cap having an outward end, an inward end and a central bore extending from the inward end towards the outward end to form a generally cylindrical sidewall with inward and outward surfaces;

each end cap including an annular groove formed on the inward surface of the sidewall, parallel to the ends and located a distance from the outward end to lie adjacent one of said annular grooves in the shaft when the cap is secured to an end of the shaft; and

a pair of locking rings for securing each end cap to an end of the shaft, each locking ring having a split toroidal shape, with a diameter such that when the ring is journaled between a pair of associated grooves of an end cap and one end of the shaft it will prevent removal of the end cap from the shaft; and

a removal tool for removing the seal pin from the security comprising:

an operable pump mounted within a housing, the housing having upper and lower ends and a sidewall;

a pump handle connected to the pump and operable to selectively pump up pressure within the pump housing;

an operable release valve for selectively permitting or preventing the build-up of pressure in the pump upon operation of the pump handle;

a piston reciprocatingly mounted within a cylinder attached to the lower end of the pump, the piston operable to move downwardly in response to a build up of pressure within the pump;

a fluid reservoir fluidly connected to the pump, for supplying fluid to be placed under pressure in the pump;

a punch secured to the piston for movement therewith, the punch having a free lower end;

a punch housing secured to the lower end of the pump and enclosing the punch therein, said punch housing having a closed lower end with an aperture through which the punch lower end will slide and project upon operation of the pump to move the piston downwardly; and

means on the lower end of the punch housing for gripping a seal pin end cap and retain the cap in position during operation of the punch to a lower position projecting from the punch housing.

2.

A seal pin for use in retaining a security cover on a hasp of a shipping container, comprising:

a rigid elongated cylindrical shaft, having upper and lower ends;

an upper annular groove formed in the shaft spaced from the upper end and extending around a circumference of the shaft;

a lower annular groove formed in the shaft spaced from the lower end and extending around a circumference of the shaft;

a pair of end caps for securement to each end of the shaft, each cap having an outward end, an inward end and a central bore extending from the inward end towards the outward end to form a generally cylindrical sidewall with inward and outward surfaces;

each end cap including an annular groove formed on the inward surface of the sidewall, parallel to the ends and located a distance from the outward end to lie adjacent one of said annular grooves in the shaft when the cap is secured to an end of the shaft; and

a pair of locking rings for securing each end cap to an end of the shaft, each locking ring having a split toroidal shape, with a diameter such that when the ring is journaled between a pair of associated grooves of an end cap and one end of the shaft it will prevent removal of the end cap from the shaft.

3.

The seal pin of claim 2, wherein each shaft end has a conical shape with a reducing diameter from the associated groove to the shaft end.

4.

The seal pin of claim 2, wherein each end cap has a flange projecting radially outwardly from the cylindrical sidewall, the flange located at the outward end thereof.

5.

A security cover for use in securing a hasp and handle of a shipping container, comprising:

a vertical channel having upper and lower ends, a front wall and opposing sidewalls extending rearwardly from the front wall;

a top plate mounted in the channel, perpendicular to the front and sidewalls and extending rearwardly the extent of the sidewalls;

a bottom plate mounted in the channel, perpendicular to the front and sidewalls and extending rearwardly the extent of the sidewalls;

a pair of vertically aligned apertures formed in the top and bottom plates, spaced from the front and sidewalls, for receiving a seal pin therethrough; and

a pair of horizontally aligned openings formed in the sidewalls, extending forwardly from rearward edges of the sidewalls, for receiving a shipping container handle therethrough.

6.

The security cover of claim 5:

wherein said top plate is spaced downwardly from the upper end of the channel, such that the upwardly projecting ends of the front and sidewalls form a parapet wall above the top plate; and

wherein said bottom plate is spaced upwardly from the lower end of the channel, such that the downwardly projecting ends of the front and sidewalls form a parapet wall below the bottom plate.

7.

The security cover of claim 6, further comprising:

a horizontal channel having opposing ends, a front wall, and opposing upper and lower walls, said horizontal channel intersecting the vertical channel to form a general cruciform shape;

said horizontal channel mounted to the vertical channel at the openings in the sidewalls of the vertical channel.

8.

The security cover of claim 7, wherein the horizontal channel front wall extends outwardly from the vertical channel front wall to open ends of the horizontal channel, and wherein the horizontal channel front wall slopes rearwardly from the connections at the vertical channel to the open ends of the horizontal channel, to thereby form shallow clearance openings at the ends of the horizontal channel.

9.

A removal tool for removing a seal pin from a security cover on a shipping container, the seal pin of the type having an elongated shaft with end caps attached at each end, and the security cover of the type secured over a hasp and handle on a shipping container with only the end caps of the seal pin exposed, the removal tool comprising:

an operable pump mounted within a housing, the housing having upper and lower ends and a sidewall;

a pump handle connected to the pump and operable to selectively pump up pressure within the pump housing;

an operable release valve for selectively permitting or preventing the build-up of pressure in the pump upon operation of the pump handle;

a piston reciprocatingly mounted within a cylinder attached to the lower end of the pump, the piston operable to move downwardly in response to a build up of pressure within the pump;

a fluid reservoir fluidly connected to the pump, for supplying fluid to be placed under pressure in the pump;

a punch secured to the piston for movement therewith, the punch having a free lower end;

a punch housing secured to the lower end of the pump and enclosing the punch therein, said punch housing having a closed lower end with an aperture through which the punch lower end will slide and project upon operation of the pump to move the piston downwardly; and

means on the lower end of the punch housing for gripping a seal pin end cap and retain the cap in position during operation of the punch to a lower position projecting from the punch housing.

10.

The removal tool of claim 9, wherein the means for gripping a seal pin end cap includes:

a semi-cylindrical wall projecting downwardly from the lower end of the punch housing, coaxial with a longitudinal axis of the punch; and

a flange projecting radially inwardly from an inward face of the semi-cylindrical wall, to form a C-shaped ring for receiving a projecting flange on the seal pin end cap.

11.

The removal tool of claim 10, further comprising a coil spring interposed within the punch housing, between the lower end of the piston and the lower end of the punch housing, for biasing the piston towards a retracted position.